

1704/203
BUILDING CONSTRUCTION II AND
COMPUTER AIDED DESIGN
June/July 2019
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN BUILDING TECHNOLOGY

MODULE II

BUILDING CONSTRUCTION II AND COMPUTER AIDED DESIGN

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Scientific calculator/Mathematical tables;

Drawing instruments.

This paper consists of SEVEN questions in TWO sections: A and B.

Answer FIVE questions choosing THREE questions from Section A and TWO questions from section B.

All questions carry equal marks.

Maximum marks for each part of a question are as indicated.

Candidates should answer the questions in English.

This paper consists of 4 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A: BUILDING CONSTRUCTION II (60 marks)

Answer **THREE** questions from this section.

1. (a) Describe the following fittings:
 (i) screw eye;
 (ii) screw hook. (4 marks)
- (b) With the aid of a sketch explain how a nailed timber frame may be aligned to squareness using a sash cramp. (10 marks)
- (c) Outline the procedure of renovating a cracked masonry perimeter wall. (6 marks)
- × 2. (a) List **four** functional requirements of a scaffolding material. (4 marks)
- (b) Sketch a putlog scaffold to show the following fittings:
 (i) putlog;
 (ii) reveal pins;
 (iii) braces. (6 marks)
- (c) Draw a cross section through a fire place and show the following:
 (i) hearth;
 (ii) gathering;
 (iii) throat;
 (iv) flue (part chimney stack). (10 marks)
- × 3. (a) (i) Define monolithic slab.
 (ii) State **two** ways used to prevent heat loss in ground concrete floor. (3 marks)
- (b) With the aid of a labelled sketch, show a single slab drive way. (6 marks)
- (c) List **two** materials used for making stairs. (2 marks)
- (d) Sketch a trussed purlin roof to indicate the following:
 (i) wall plate;
 (ii) ceiling joist/tie
 (iii) ridge;
 (iv) rafter;
 (v) purlin. (9 marks)

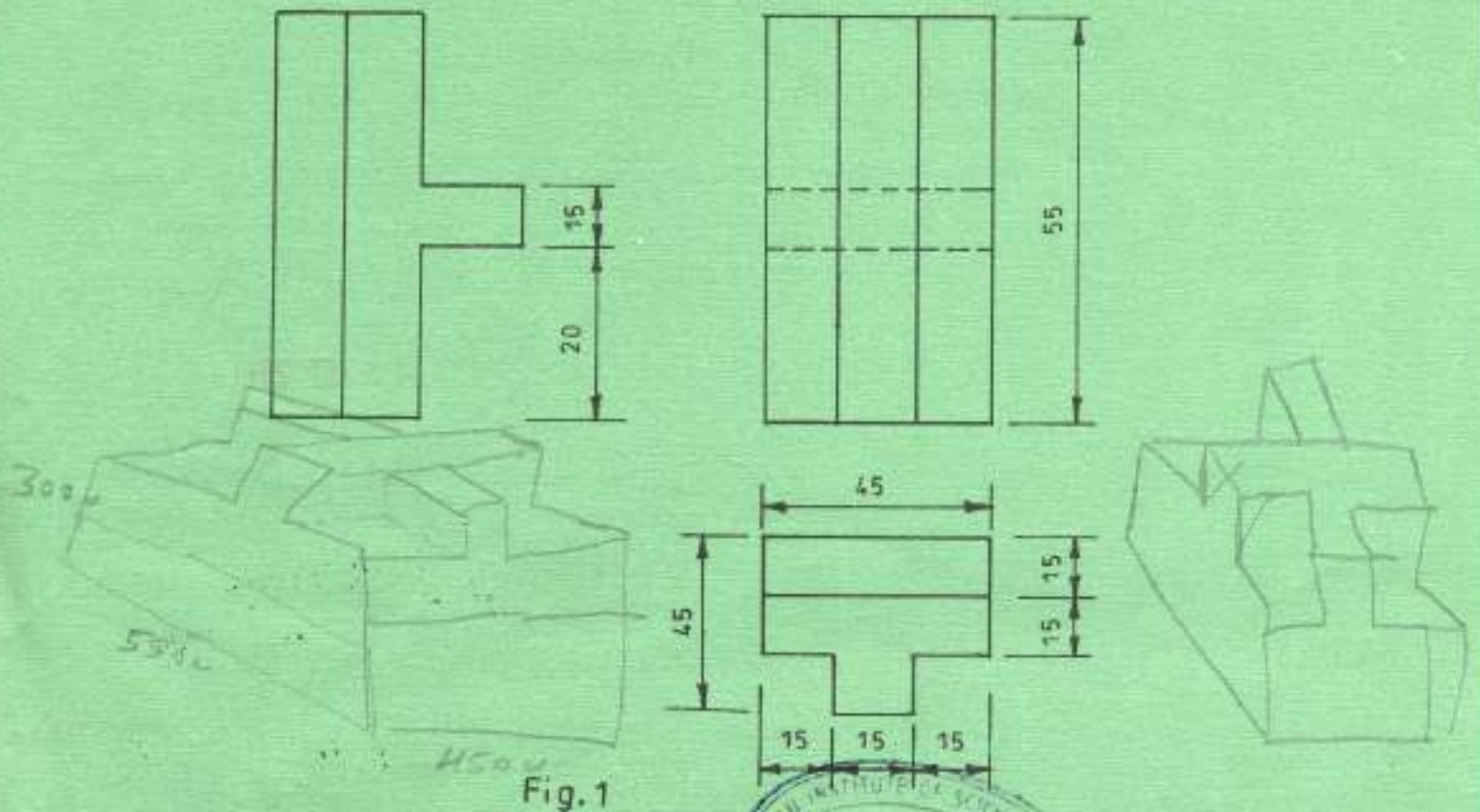


- 4. (a) List **two** materials used for making window frames. (2 marks)
- (b) With the aid of a sketch draw a standard wood casement window with one fixed light, casement sash, one vent light and label. (10 marks)
- (c) State and explain **four** suitable properties of construction materials. (8 marks)

SECTION B: COMPUTER AIDED DESIGN (40 marks)

Answer question 5 and another **ONE** question from this section.

- 5. **Figure 1** below shows orthographic views of the object.
 - (a) Using CAD draw its isometric view; (16 marks)
 - (b) Indicate all its dimensions; (2 marks)
 - (c) Save the drawing on the CD provided. (2 marks)



6. (a) With **six** examples, site the specific application of the interactive computer graphics in our today's life. (12 marks)
- (b) (i) List **four** types of utility commands control on a CAD screen and their functions. (4 marks)
- (ii) Explain how you can communicate with CAD. (4 marks)
7. (a) Formulate CAD-sequence command for the diagram in **figure 2** below. (14 marks)

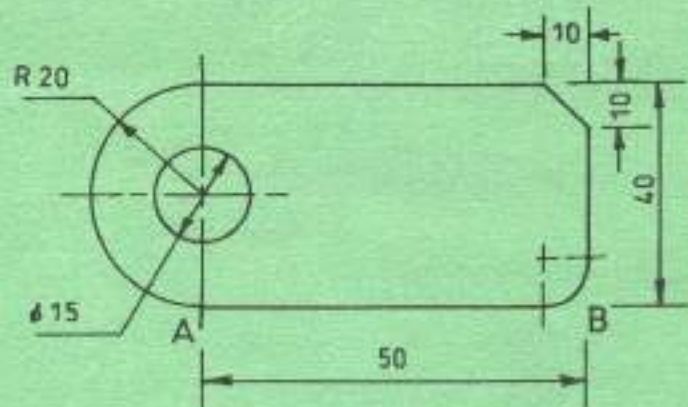


Fig. 2

- (b) (i) Explain **two** uses of 3D modelling. (2 marks)
- (ii) Name **four** methods used to relocate the user co-ordinate system. (4 marks)



THIS IS THE LAST PRINTED PAGE.